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Test 1909: New Holland TM165 Diesel

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SUMMARY OF OECD TEST 1909 - NEBRASKA SUMMARY 346

NEW HOLLAND TM165 DIESEL

18 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
		Rated Engine Speed (PTO speed 1085 rpm)			
143.5 (107.0)	2300	9.25 (35.03)	0.451 (0.274)	15.50 (3.05)	
		Maximum Power (2 hours)			
148.3 (110.6)	2164	9.15 (34.64)	0.431 (0.262)	16.19 (3.19)	
		Standard Power Take-off Speed (1000 rpm)			
147.8 (110.2)	2121	8.98 (34.01)	0.425 (0.258)	16.44 (3.24)	

VARYING POWER AND FUEL CONSUMPTION

143.5 (107.0)	2300	9.25 (35.03)	0.451 (0.274)	15.50 (3.05)	Air temperature
127.8 (95.3)	2415	8.65 (32.76)	0.473 (0.288)	14.77 (2.91)	79°F (26°C)
96.2 (71.7)	2420	6.98 (26.42)	0.507 (0.308)	13.78 (2.71)	Relative humidity
64.7 (48.2)	2437	5.49 (20.77)	0.593 (0.360)	11.79 (2.32)	27%
32.7 (24.4)	2451	4.05 (15.33)	0.865 (0.526)	8.07 (1.59)	Barometer
--	2470	2.58 (9.77)	--	--	30.0" Hg (101.7 kPa)
--			--	--	

Maximum Torque - 487.1 lb.-ft. (660.4 Nm) at 1298 rpm

Maximum Torque Rise - 48.7%

Torque rise at 1800 engine rpm - 29%

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
					Maximum Power 9th(3B) Gear				
125.0 (93.2)	10445 (46.5)	4.49 (7.22)	2308	4.6	0.526 (0.320)	13.29 (2.62)	189 (87)	57 (14)	30.1 (102.0)
					75% of Pull at Maximum Power 9th(3B) Gear				
99.2 (74.0)	7815 (34.8)	4.76 (7.67)	2418	3.3	0.568 (0.345)	12.30 (2.42)	187 (86)	59 (15)	30.1 (102.0)
					50% of Pull at Maximum Power 9th(3B) Gear				
67.5 (50.3)	5225 (23.2)	4.84 (7.79)	2431	2.3	0.668 (0.406)	10.46 (2.06)	187 (86)	59 (15)	30.1 (102.0)
					75% of Pull at Reduced Engine Speed 10th(4B) Gear				
99.2 (74.0)	7820 (34.8)	4.76 (7.66)	2013	3.5	0.493 (0.300)	14.16 (2.79)	187 (86)	59 (15)	30.1 (101.9)
					50% of Pull at Reduced Engine Speed 10th(4B) Gear				
67.2 (50.1)	5215 (23.2)	4.83 (7.77)	2019	2.4	0.559 (0.340)	12.49 (2.46)	185 (85)	59 (15)	30.1 (101.9)

Location of Test: Silsoe Research Institute, Wrest Park, Silsoe, MK45 4HS, United Kingdom

Dates of Test: February- April, 2000

Manufacturer: New Holland UK Ltd., Basildon, Essex, United Kingdom

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.839 **Fuel weight** 6.98 lbs/gal (0.837 kg/l) **Oil SAE** 10W30 **API service classification** CF-4 **Transmission and hydraulic lubricant** SAE 10W30 API GL4 **Front axle lubricant** SAE 10W30 API GL4

ENGINE: Make New Holland Diesel **Type** six cylinder vertical with turbocharger **Serial No.** WW837801 **Crankshaft** lengthwise **Rated engine speed** 2300 **Bore and stroke** 4.40" x 5.00" (111.8 mm x 127.0 mm) **Compression ratio** 17.5 to 1 **Displacement** 456 cu in (7480 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper elements **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: **Type** front wheel assist **Serial No.** 122138B **Tread width** rear 60.2" (1530 mm) to 87.9" (2232 mm) front 60.3" (1532 mm) to 88.1" (2238 mm) **Wheelbase** 93.0" (2723 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.37 (2.21) second 1.65 (2.66) third 1.98 (3.19) fourth 2.39 (3.84) fifth 2.87 (4.62) sixth 3.19 (5.13) seventh 3.45 (5.55) eighth 3.83 (6.17) ninth 4.61 (7.42) tenth 5.54 (8.92) eleventh 6.67 (10.73) twelfth 8.02 (12.90) thirteenth 9.05 (14.56) fourteenth 10.88 (17.51) fifteenth 13.07 (21.03) sixteenth 15.71 (25.29) seventeenth 18.90 (30.42) eighteenth 22.74 (36.59) reverse 2.68 (4.31), 3.23 (5.19), 3.87 (6.23), 4.65 (7.49), 5.60 (9.01), 6.73 (10.83) **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** single wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1971 engine rpm or 1000 rpm at 2121 engine rpm **Unladen tractor mass** 14455 lb (6557 kg)

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged) MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
1st(1A)Gear									
49.1 (36.6)	14615 (65.0)	1.26 (2.03)	2435	14.7	0.792 (0.482)	8.82 (1.74)	185 (85)	61 (16)	30.1 (101.9)
2nd(2A)Gear									
59.7 (44.5)	14500 (64.5)	1.54 (2.48)	2432	13.2	0.728 (0.443)	9.59 (1.89)	187 (86)	59 (15)	30.1 (101.9)
3rd(3A)Gear									
71.2 (53.1)	14410 (64.1)	1.85 (2.98)	2426	12.9	0.681 (0.414)	10.25 (2.02)	187 (86)	61 (16)	30.1 (101.9)
4th(4A)Gear									
84.1 (62.7)	14165 (63.0)	2.23 (3.59)	2415	12.5	0.651 (0.396)	10.74 (2.12)	189 (87)	61 (16)	30.1 (102.0)
5th(5A)Gear									
100.7 (75.1)	13780 (61.3)	2.74 (4.41)	2410	10.4	0.606 (0.369)	11.52 (2.27)	189 (87)	61 (16)	30.1 (102.0)
6th(1B)Gear									
110.6 (82.5)	13525 (60.2)	3.07 (4.94)	2394	9.1	0.575 (0.350)	12.13 (2.39)	189 (87)	59 (15)	30.1 (101.9)
7th(6A)Gear									
114.7 (85.5)	13420 (59.7)	3.21 (5.16)	2299	8.6	0.559 (0.340)	12.49 (2.46)	187 (86)	59 (15)	30.1 (102.0)
8th(2B)Gear									
123.8 (92.3)	13210 (58.8)	3.51 (5.66)	2250	7.9	0.511 (0.311)	13.65 (2.69)	187 (86)	59 (15)	30.1 (101.9)
9th(3B)Gear									
127.7 (95.2)	11445 (50.9)	4.18 (6.73)	2166	5.3	0.501 (0.305)	13.95 (2.75)	188 (87)	57 (14)	30.1 (102.0)
10th(4B)Gear									
125.8 (93.8)	9240 (41.1)	5.11 (8.22)	2170	3.9	0.511 (0.311)	13.68 (2.70)	187 (86)	59 (15)	30.1 (102.0)
11th(5B) Gear									
128.1 (95.5)	7755 (34.5)	6.19 (9.96)	2171	3.3	0.506 (0.308)	13.81 (2.72)	188 (87)	57 (14)	30.1 (102.0)
12th(6B) Gear									
124.6 (92.9)	6260 (27.8)	7.46 (12.01)	2168	2.9	0.525 (0.319)	13.30 (2.62)	187 (86)	59 (15)	30.1 (101.9)
13th(1C) Gear									
128.9 (96.1)	5710 (25.4)	8.46 (13.62)	2169	2.4	0.506 (0.308)	13.81 (2.72)	188 (87)	55 (13)	30.1 (102.0)
14th(2C) Gear									
123.0 (91.7)	4530 (20.2)	10.18 (16.38)	2160	2.1	0.535 (0.326)	13.05 (2.57)	187 (86)	57 (14)	30.1 (102.0)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's 3 point lift capacity claim of 12190 lb (5530 kg) with 1 lift assist cylinder. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1909**, Nebraska Summary 346, January 8, 2001.

Brent T. Sampson
Test Engineer

L.L. Bashford
M.F. Kocher
R.D. Grisso, Jr.
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
Maximum Sound level in 6th (1B) gear	76.0	76.0
At no load in 9th (3B) gear	74.0	74.0
Bystander in 18th (6C) gear	--	84.0

TIRES AND WEIGHT

Rear tires - No., size, ply & psi (kPa)
Front tires - No., size, ply & psi (kPa)
Height of Drawbar
Static Weight with operator - Rear
 - Front
 - Total

Tested Without Ballast

Two 20.8R38; **,12(83)
 Two 16.9R28; **,12(83)
 18.3 in (465 mm)
 9345 lb (4239 kg)
 5275 lb (2393 kg)
 14620 lb (6632 kg)

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Disengaged)

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F cool- ing med	Temp. °C Air dry bulb	Barom. inch Hg (kPa)
Maximum Power 13th(1C) Gear									
123.5 (92.1)	5250 (23.4)	8.82 (14.19)	2293	2.8	0.525 (0.319)	13.30 (2.62)	187 (86)	52 (11)	30.0 (101.7)
75% of Pull at Maximum Power 13th(1C) Gear									
97.9 (73.0)	3925 (17.5)	9.35 (15.05)	2418	2.2	0.601 (0.366)	11.62 (2.29)	188 (87)	52 (11)	30.0 (101.7)
50% of Pull at Maximum Power 13th(1C) Gear									
66.6 (49.7)	2640 (11.7)	9.46 (15.22)	2431	1.6	0.720 (0.438)	9.70 (1.91)	187 (86)	52 (11)	30.0 (101.7)
75% of Pull at Reduced Engine Speed 14th(2C) Gear									
98.2 (73.2)	3935 (17.5)	9.36 (15.06)	2010	2.0	0.507 (0.308)	13.78 (2.71)	185 (85)	52 (11)	30.0 (101.7)
50% of Pull at Reduced Engine Speed 14th(2C) Gear									
66.2 (49.4)	2630 (11.7)	9.45 (15.21)	2020	1.6	0.585 (0.356)	11.93 (2.35)	185 (85)	52 (11)	30.0 (101.7)
MAXIMUM POWER IN SELECTED GEARS									
1st(1A) Gear									
37.0 (27.6)	11240 (50.0)	1.23 (1.99)	2442	15.0	0.904 (0.550)	7.73 (1.52)	185 (85)	52 (11)	30.0 (101.7)
2nd(2A) Gear									
45.3 (33.8)	11195 (49.8)	1.52 (2.44)	2440	13.7	0.800 (0.487)	8.73 (1.72)	185 (85)	52 (11)	30.0 (101.7)
3rd(3A) Gear									
55.1 (41.1)	11105 (49.4)	1.86 (3.00)	2437	11.8	0.706 (0.429)	9.90 (1.95)	185 (85)	52 (11)	30.0 (101.7)
4th(4A) Gear									
65.8 (49.1)	11040 (49.1)	2.24 (3.60)	2432	11.7	0.682 (0.415)	10.24 (2.02)	185 (85)	52 (11)	30.0 (101.6)
5th(5A) Gear									
79.9 (59.6)	11130 (49.5)	2.69 (4.33)	2417	11.2	0.614 (0.374)	11.37 (2.24)	185 (85)	52 (11)	30.0 (101.6)
6th(1B) Gear									
88.4 (65.9)	10905 (48.5)	3.04 (4.89)	2418	9.8	0.585 (0.356)	11.93 (2.35)	187 (86)	54 (12)	30.0 (101.6)
7th(6A) Gear									
96.0 (71.6)	10930 (48.6)	3.29 (5.30)	2417	9.6	0.571 (0.347)	12.23 (2.41)	187 (86)	52 (11)	30.0 (101.6)
8th(2B) Gear									
105.9 (79.0)	10815 (48.1)	3.67 (5.91)	2412	9.1	0.603 (0.367)	11.57 (2.28)	188 (87)	52 (11)	30.0 (101.6)
9th(3B) Gear									
120.0 (89.5)	10905 (48.5)	4.13 (6.64)	2261	9.3	0.542 (0.330)	12.89 (2.54)	188 (87)	52 (11)	30.0 (101.6)
10th(4B) Gear									
125.0 (93.2)	9420 (41.9)	4.98 (8.01)	2170	5.2	0.511 (0.311)	13.65 (2.69)	188 (87)	54 (12)	29.9 (101.4)
11th(5B) Gear									
128.3 (95.7)	7935 (35.3)	6.06 (9.75)	2167	4.0	0.496 (0.302)	14.06 (2.77)	188 (87)	54 (12)	30.0 (101.5)
12th(6B) Gear									
123.2 (91.9)	6295 (28.0)	7.34 (11.81)	2162	3.0	0.517 (0.315)	13.50 (2.66)	188 (87)	55 (13)	30.0 (101.5)
13th(1C) Gear									
129.0 (96.2)	5825 (25.9)	8.31 (13.37)	2167	3.0	0.492 (0.299)	14.21 (2.80)	187 (86)	52 (11)	30.0 (101.7)
14th(2C) Gear									
127.6 (95.2)	4770 (21.2)	10.03 (16.14)	2164	2.6	0.499 (0.303)	14.01 (2.76)	187 (86)	52 (11)	30.0 (101.7)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY:II

Quick Attach:None

Maximum Force Exerted Through Whole Range: 7125 lbs (31.7 kN)(with 1 lift assist cylinder)
8455 lbs (37.6 kN)(with 2 lift assist cylinders)

i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2990 psi	(206 bar)
ii) Pump delivery rate at minimum pressure:	32.9 GPM	(124.6 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	29.1 GPM	(110.3 l/min)
Delivery pressure:	2465 psi	(170 bar)
Power:	41.9 HP	(31.3 kW)

SAE Static Test System pressure 2440 psi (168 Bar)
(with (1) lift assist cylinder)

Hitch point distance to ground level in. (mm)	8.0(203)	15.9(405)	23.8(605)	31.7(805)	36.5(928)
Lift force on frame lb	11960	11575	11395	11150	10500
" " " " " " (kN)	(53.2)	(51.5)	(50.7)	(49.6)	(46.7)

SAE Static Test System pressure 2440 psi (168 Bar)
(with (2) lift assist cylinders)

Hitch point distance to ground level in. (mm)	8.0(203)	15.9(405)	23.8(605)	31.7(805)	36.9(937)
Lift force on frame lb	15065	14390	14520	14590	14075
" " " " " " (kN)	(67.0)	(64.0)	(64.6)	(64.9)	(62.6)

ASAE Static Test System pressure 2715 psi (187 Bar)
(with (1) lift assist cylinder)

Hitch point distance to ground level in. (mm)	8.0(203)	15.9(405)	23.8(605)	31.7(805)	36.5(928)
Lift force on frame lb	13310	12880	12700	12410	11690
" " " " " " (kN)	(59.2)	(57.3)	(56.5)	(55.2)	(52.0)

ASAE Static Test System pressure 2715 psi (187 Bar)
(with (2) lift assist cylinders)

Hitch point distance to ground level in. (mm)	8.0(203)	15.9(405)	23.8(605)	31.7(805)	36.9(937)
Lift force on frame lb	16770	16005	16165	16255	15670
" " " " " " (kN)	(74.6)	(71.2)	(71.9)	(72.3)	(69.7)

HITCH DIMENSIONS AS TESTED NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	29.7	754	30.2	768
B	9.1	230	9.1	230
C	15.6	395	15.6	395
D	14.3	363	14.3	363
E	8.2	208	10.8	275
F	9.8	250	9.8	250
G	33.6	855	33.6	855
H	0.7	17	0.7	17
I	17.9	455	16.9	430
J	23.8	605	23.8	605
K	17.1	435	17.1	435
L	47.0	1194	47.0	1194
M	23.3	592	23.3	592
N	38.3	974	38.3	974
O	7.8	198	8.0	203
P	47.8	1215	42.8	1088
Q	36.4	925	34.3	870
R	29.1	740	30.5	775

